

REMARKS

Applicants appreciate the Examiner's thorough review of the present application, and respectfully request reconsideration in light of the preceding amendments and the following remarks.

Claims 1-4 and 6-20 are pending in the application. The original claims have been amended to improve claim language. New claims 18-20, which find solid support in the original specification and drawings have been added to provide Applicants with the scope of protection to which they are believed entitled. No new matter has been introduced through the foregoing amendments.

Claims 1-17 are rejected under 35 U.S.C.112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In response, claims 1 and 17 have been amended to remove the allegedly unclear language, and claims 1-17 now meet the requirements set forth in 35 U.S.C.112, second paragraph.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Isaka* et al. (Japan 58-225133, hereinafter *Isaka*) in view of *Hahne* et al. (U.S. Pat. 6,285,032, hereinafter *Hahne*). Although Applicants do not necessarily agree with the Examiner's position, amendments have nevertheless been made to specifically avoid the rejections, solely for the purpose of expediting prosecution. In particular, independent claim 1 has been amended to incorporate further limitations, and amended claim 1 is now believed patentable over *Isaka* and *Hahne* for at least the following reasons.

Isaka discloses a method of corona discharge treatment of a plastic formed product surface. The purpose of *Isaka*'s corona discharge treatment is to change the components of the plastic product. *Isaka* uses the gas flow to disturb the laminar air layer (See Figure 3) and mix the gas flow with air. In contrast, as disclosed in the instant application, the corona electrode functions to

convert the laminar air boundary layer to turbulent air, and substantially completely replace the turbulent air with the inert gas. The different purposes of the disclosed embodiments of the present invention and *Isaka* are obtained by many different structural features now claimed.

For example, *Isaka* discloses a cover 2. However, cover 2 is ventilated through a gas-feeding pipe. Thus, it is impossible to generate a partial-vacuum zone within the cover 2, or even at the peripheral of cover 2. Figure 25 of *Isaka* demonstrates a gas nozzle 14 positioned behind the second electrode 3, but that gas nozzle 14 cannot generate an inert gas laminar layer. As shown by the arrows of Figure 25, gas emitted from gas nozzle 14 will be dispersed beneath the electrodes and into the space between the plate 12 and electrode 3. Apparently, a portion of the gas will flow around each electrode 3 and be ejected downwardly through the slot between the two electrodes 3. Accordingly, if the pressure of gas emission is not high enough, the laminar air will mix with the gas. Thus, *Isaka* fails to disclose a chamber sealed by an upper electrode cover and a gas feeding device configured to feed gas to partial-vacuum zone as now recited in independent claim 1.

Hahne fails to cure the above-mentioned deficiency of *Isaka*. *Hahne* discloses a device for removing the gaseous laminar boundary layer of a web, but *Hahne* fails to disclose a chamber sealed by a cover and a gas feeding device configured to feed gas to partial-vacuum zone.

Therefore, *Isaka* and *Hahne* singly or in combination would fail to disclose all limitations of amended claim 1, in particular, “a common upper electrode cover covering the corona electrodes and sealing the top of the first chamber” and “a partial-vacuum zone formed between a lower end of the further corona electrode and the substrate.” Amended claim 1 is thus patentable over the applied art of record.

Claims 2-7 depend from claim 1 and are considered patentable for at least the reasons advanced with respect to claim 1.

In addition, Applicant respectfully submits that neither Fig. 25 nor Fig. 21 of *Isaka* discloses an inert gas dispenser with two lateral baffles.

Claims 8, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Isaka* et al. in view of *Hahne* et al., and further in view of Kalwar et al. (U.S. Pat. 4946,568)

Claims 8, 10 and 11 depend from claim 1 and are considered patentable for at least the reasons advanced with respect to claim 1.

Claim 9 is rejected under 35 U.S.C. 103 (a) as being unpatentable over *Isaka* et al. in view of *Hahne* et al. and Kalwar et al. and further in view of Izokh et al. (SU 1763024)

Claim 9 depends indirectly from claim 1 and is considered patentable for at least the reasons advanced with respect to claim 1.

Moreover, Applicant respectfully requests the Examiner to provide an English translation of at least the relevant/cited/replied upon part Izokh so that the rejection can be fully understood.

Claims 12-17 are rejected under 35 U.S.C. 103 (a) as being unpatentable over *Isaka* et al. in view of *Hahne* et al. and further in view of Stahl (EP 1199165 A1, hereinafter Stahl) and Obenshain (U.S. Pat. 4,329,212, hereinafter Obenshain)

Claims 12-17 depend from claim 1 and are considered patentable for at least the reasons advanced with respect to claim 1.

In addition, Applicant respectfully submits that Stahl does not teach or suggest using an UV radiator as alleged in the Office Action. *Hahne* does not include “Figure 25”, and Figure 25 of *Isaka* also does not teach or suggest a first chamber constituted by the front corona electrode and the further corona electrode, *Isaka*’s chamber is constituted by an integral cover 2.

Regarding new claims 18-20, as claims 18-20 depend from claim 1, claims 18-20 should be considered patentable over the art for at least the reasons advanced with respect to claim 1.


Each of the Examiner's rejections has been traversed/overcome. Accordingly, Applicants respectfully submit that all claims are now in condition for allowance. Early and favorable indication of allowance is courteously solicited.

The Examiner is invited to telephone the undersigned, Applicant's attorney of record, to facilitate advancement of the present application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 07-1337 and please credit any excess fees to such deposit account.

Respectfully submitted,

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